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GB 1340152 A EP 0787992 A2 EP 0293035 A2  
WO 87/02782 A1 US 5189257 A US 4673872 A

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COPY

(54) Abstract Title  
**Improved electricity meter housing**

(57) A housing (10) for an electricity meter comprises two housing members which abut one another to form the housing (10). A hook member (16) carried by one housing member engages with an abutment (18) on the other housing member along a generally linear direction. As the two are brought together, the hook member (16) and abutment (18) deform so that the free end of the hook member (16) slides over and around the abutment (18) in a 'snap-fitting' manner. Movement of the housing members away from one another along the said substantially linear direction is prevented by engagement of the hook member (16) around the abutment (18). The housing members can be disengaged by pivoting of the hook member (16) carried by one housing member around the abutment (18) of the other. This arrangement allows for easy assembly of the housing (10), easy access for maintenance and simple and inexpensive manufacture.

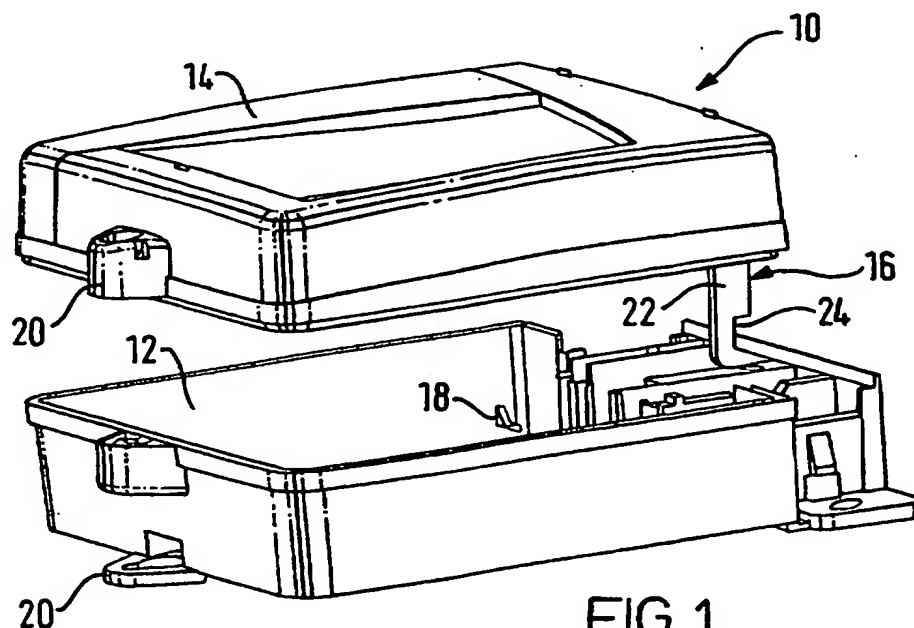
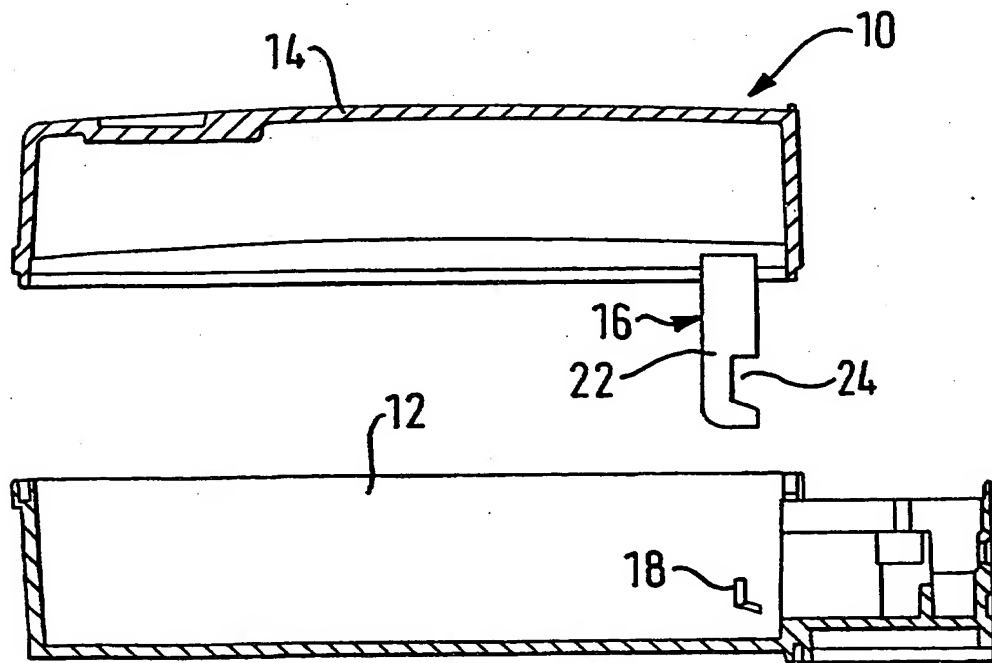
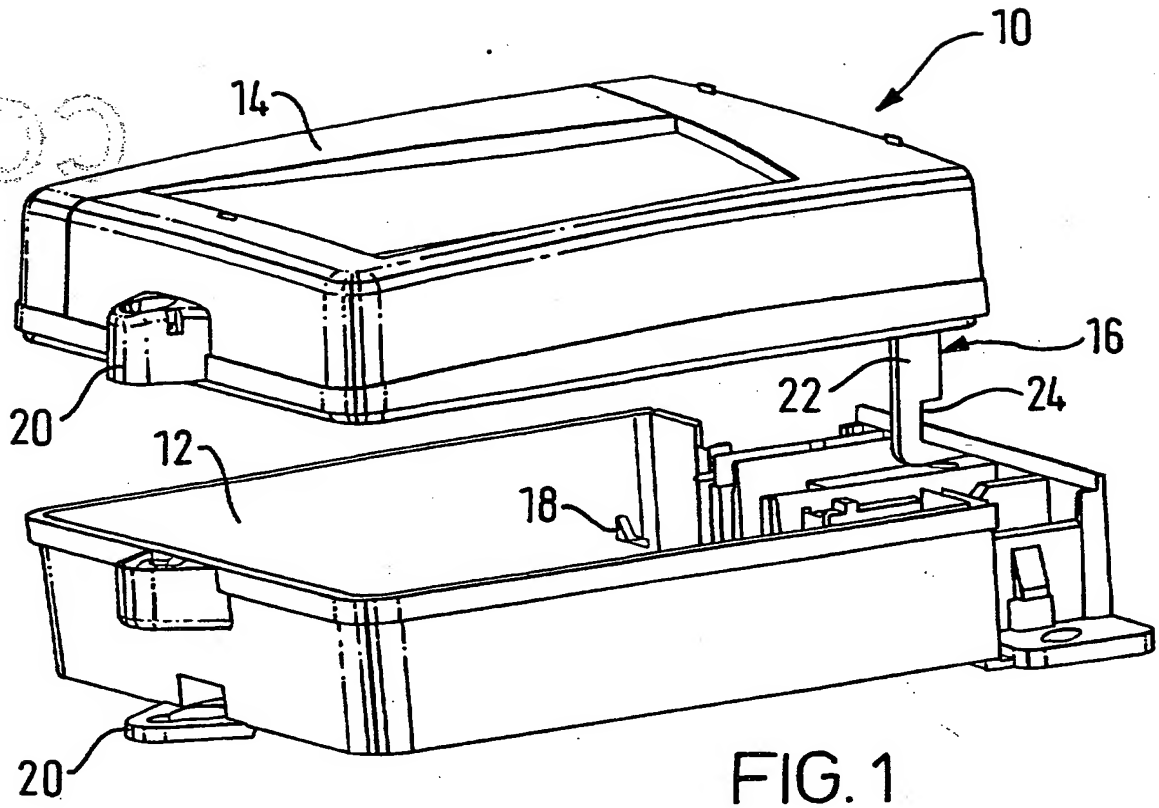


FIG. 1

1/1



## IMPROVED ELECTRICITY METER HOUSING

The present invention relates to an improved electricity meter housing, in particular, to a housing for an electricity meter comprising at least two housing members  
5 which abut one another to form the housing

It is usual for electricity metering apparatus intended for monitoring electricity consumption in a domestic or commercial establishment to be contained within a housing which is sealed against tampering by the consumer. Since  
10 any sealing arrangement must be easily removed by employees of the electricity supply company, current practice is to seal the housing by means of a wire passed through two or more aligned loops provided on the two halves of the meter housing. The ends of the wire can be  
15 crimped or otherwise fastened so as to form a closed loop, preventing access to the interior of the housing. When the housing is to be opened, the wire is simply cut through to allow the two halves of the housing to be moved apart. A fresh wire is applied to re-seal the housing once the  
20 necessary work on the interior mechanism of the meter has been completed.

Many existing meter housings have two halves hinged together, the edges of the housing remote from the hinge being secured together as described above by means of a wire loop to close the housing against unauthorised  
25 access. Whilst such housings function acceptably once installed, the need for a hinge construction makes assembly of the meter and its housing more complex than is desirable. An alternative construction which has been  
30 proposed is to use a snap-fit arrangement, but this too has disadvantages; while assembly of a meter housing by means of a snap fit arrangement is quick and simple, access to the interior of the housing by electricity

company employees, once the meter has been installed, is made difficult.

Accordingly, the housing of the invention is characterised in that a hook member carried by one housing member  
5 engages with an abutment on the other housing member; the hook member and abutment being such that movement of the two housing members towards one another in a substantially linear manner causes deformation such as to allow the free end of the hook member to slide over and around the  
10 abutment in a 'snap-fitting' manner so that movement of the housing members away from one another along the said substantially linear direction is prevented by engagement of the hook member around the abutment; the housing members being disengageable by pivoting of the hook member  
15 carried by one housing member around the abutment of the other.

This arrangement has the advantage that the housing can easily be assembled by simply snap-fitting the two parts together. The resulting housing can be sealed in the usual  
20 manner by means of a wire loop, the wire seal being provided at a location on the housing remote from the hook member and abutment which snap together so as to prevent the pivoting movement which would allow the two parts of the housing to be disassembled. When access to the housing  
25 is required, the wire loop is cut through, as before and one part of the housing pivoted relative to the other about the 'hinge' formed by the engagement of the hook member with the abutment.

Where the housing is formed by moulding of, for example,  
30 plastics material, the hook member and abutment can be moulded integrally with the two parts of the housing, making manufacture of the housing relatively cheap and simple.

A housing in accordance with the invention, will now be described in detail, by way of example, with reference to the drawings in which:

5 Figure 1 is a perspective view of a housing in accordance with the invention; and

Figure 2 is a simplified sectional view of the housing of Figure 1.

The housing (10) shown in the drawings is intended for use in, for example, an electricity meter. It is formed of  
10 moulded plastics material and consists of two housing parts, for convenience referred to here as the housing body (12) and lid (14). In practice the two parts may take whatever form is appropriate and it will be understood that the relative size and shape of the two parts is of no  
15 particular relevance to the invention. Subject to the need to allow for the features described in detail below, the housing body (12) and lid (14) may be provided on their interior with moulded features intended to support the meter or other mechanism intended to be held within the  
20 enclosure formed by the housing (10).

The housing body (12) and lid (14) together form an enclosure which can be sealed by means of a conventional wire seal (not shown). To allow for sealing by means of a wire seal, the housing body (12) and lid (14) are provided  
25 on their exterior with projecting loops (20) moulded integrally with the housing body (12) and lid (14) mouldings. When the lid (14) is secured to the housing body (12) to close the housing (10), the loops (20) on the two parts of the housing (10) are aligned with one another  
30 so that a wire can easily be passed through them to seal the housing (10).

As shown in the drawings, the lid (14) is provided on its underside with a depending hook member (16) which extends, in use, towards the housing body (12). The hook member (16) is moulded integrally with the lid (14) and may take the form of a flat tab (22) with a recess (24) at one of its edges, so as to give a hook-like end to the tab (22).

The housing body (12) is provided with an abutment (18) which, again, is integrally moulded with the body. The abutment (18) is positioned in the housing body (12) so that it coincides with the position of the hook-like recess (24) on the tab (22) which forms the hook member (16) when the housing body (12) and lid (14) are brought together to close the housing (10). The abutment (18), or at least, the portion of the abutment (18) which, in use, engages the hook member (16) is of a size and shape to be locatable in the recess (24) of the hook member (16).

The housing (10) is assembled by bringing the two parts of the housing (10) together in a generally linear fashion, along a direction parallel to the plane of the paper in Figures 1 and 2. As the two parts are brought together, the end of the hook member (16) on the lid (14) comes into contact with the abutment (18) in the housing body (12) and is forced aside, the plastics material of which the housing (10) is formed being sufficiently resilient and flexible to allow the hook member (16) and abutment (18) to deform sufficiently that the end of the hook member (16) can slide over the abutment (18) until the hook member (16) snaps back as the abutment (18) locates in the recess (24) of the hook member (16).

Thus the housing (10) is easily assembled simply by bringing the two parts of the housing (10), the housing body (12) and lid (14) together with a 'snap-fitting' action. Once the housing (10) is assembled, the engagement of the hook member (16) around the abutment (18) prevents

the two parts of the housing (10) being separated again by simple linear movement of the kind by which they were brought together. A wire seal can be passed through the loops (20) on the exterior of the housing body (12) and lid (14) to fasten the two together and prevent unauthorised access.

When the housing (10) is to be opened for repair or inspection, the wire seal is cut through and the lid (14) is pivoted, in the direction of arrow A in Figure 2, about the 'hinge' formed by the engagement of the hook member (16) and the abutment (18), until the lid (14) can be lifted free of the housing body (12).

This arrangement allows for easy assembly of the housing, easy access for maintenance and simple and inexpensive manufacture.

It will be appreciated that although the hook member (16) is provided on the lid in the embodiment described above it could just as well be formed on the housing body, with a suitable abutment (18) being provided on the lid. Similarly, although the housing assembly described is a simple two-part construction, the arrangement of the invention might equally be used to secure together two parts of a more complex multi-part assembly or parts of a housing intended to contain a mechanism other than an electricity meter.

CLAIMS

1. A housing (10) for an electricity meter comprising at least two housing members which abut one another to form the housing (10), the housing (10) being characterised in  
5 that a hook member (16) carried by one housing member engages with an abutment (18) on the other housing member; the hook member (16) and abutment (18) being such that movement of the two housing members towards one another in a substantially linear manner causes deformation such as  
10 to allow the free end of the hook member (16) to slide over and around the abutment (18) in a 'snap-fitting' manner so that movement of the housing members away from one another along the said substantially linear direction is prevented by engagement of the hook member (16) around  
15 the abutment (18); the housing members being disengageable by pivoting of the hook member (16) carried by one housing member around the abutment (18) of the other.
2. A housing (10) according to claim 1 wherein the housing members are formed by moulding and the hook member  
20 (16) and abutment (18) are moulded integrally therewith.
3. A housing (10) according to claim 1 or 2 wherein the housing members are provided with means for engagement by sealing means; said means for engagement being provided at a location on the housing (10) remote from the hook member  
25 (16) and abutment (18).
4. A housing (10) for an electricity meter, the housing (10) being substantially as hereinbefore described with reference to the drawings.





Application No: GB 9927586.9  
Claims searched: 1 to 4

Examiner: Rosie Hardy  
Date of search: 29 February 2000

**Patents Act 1977**  
**Search Report under Section 17**

**Databases searched:**

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:  
UK Cl (Ed.R): G1U (UR104 UR1102 UR1104 UR1124 UR2100 UR21133 UR2200)  
Int Cl (Ed.7): G01R 1/04 11/02 11/04 11/24 H02B 1/06 1/26 1/28 1/30 1/38 1/46  
Other: ONLINE: EPODOC JAPIO WPI

**Documents considered to be relevant:**

Category	Identity of document and relevant passage			Relevant to claims
A	GB1340152	AB ERMI	See whole document	1
X	EP0787992	A2 AEG	See columns 2 and 3	1 and 2
X	EP0293035	A2 B.V. KUNSTSTOFFENINDUSTRIE ATTEMA	See figure 2	1 and 2
X	WO87/02782	A1 GENERAL ELECTRIC COMPANY	See figure 4 and pages 16 & 17	1 and 2
A	US5189257	BORGMEYER et al	See figures 4a and 4b	1 and 2
X, &	US4673872	GENERAL ELECTRIC COMPANY	See figure 4 and columns 7 and 8	1 and 2

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